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EXAMINER	
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ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,859	SCHMIDT, VALERIAS	
	Examiner	Art Unit	
	NAISHADH N. DESAI	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,15-17 and 20-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,15-17,20-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/25/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe et al (US 5889342) and Otsuka et al (JP 2002-125352) further in view of Hayes (US 5925960).

2. Regarding claim 1, Hasebe et al teaches:

A rotor device comprising:

a laminated core arrangement (Fig 3,3) mounted on a shaft (Fig 3,2) and having axial bores for conduction of a coolant (Col 3 ll 46-53, Fig 3 and abstract), and

two rotor pressure rings (Fig 3,21a and b) mounted on the shaft (Fig 3,2) to, secure of the laminated core arrangement therebetween (Fig 3,21a, b,30 and Col 3 ll 46-53), wherein

at least one of the two rotor pressure rings is configured for coolant to enter and exit through the axial bores (Col 3 ll 46-53, Fig 3), with coolant entering the rotor pressure ring from an area outside the shaft, said rotor pressure ring having a coolant leadthrough in fluid communication with a first plurality of axial bores (Col 3 ll 46-53 and Fig 4,30) for entry of coolant, and

a bore assembly in fluid communication with a second plurality of axial bores (Fig 4,25),

Hasebe et al teach the device as claimed above including use of pressure rings having coolant a leadthrough (Figs 3 and 4). Hasebe et al do not appear to teach that the pressure ring (Fig 3,21a and b) is configured for coolant to “enter and exit” through the axial bores, “with coolant entering the rotor pressure ring from an area outside the shaft” or for the bore assembly to have a plurality of axial bores (Fig 4,25) “for entry of coolant”. Hasebe et al also do not appear to explicitly teach “a coolant routing wall which projects obliquely outward away from the bore assembly to conceal the bore assembly in an axial direction and to enhance a flow dynamics for the coolant with respect to the bore assembly”. Otsuka et al teaches a device having “a coolant routing wall (Fig 2,28 and 36) which projects obliquely outward away from the bore assembly to conceal the bore assembly in an axial direction and to enhance a flow dynamics for the coolant with respect to the bore assembly”. Otsuka et al do not teach that the pressure ring is configured for coolant to “enter and exit” through the axial bores, “with coolant entering the rotor pressure ring from an area outside the shaft”, or a bore assembly to have a plurality of axial bores “for entry of coolant”. Hayes (Fig 3) teaches a device

having a “pressure ring (Fig 3,36) that is configured for coolant to enter and exit through the axial bores (Fig 3, arrows indicating coolant flow), with coolant entering the rotor pressure ring from an area outside the shaft (Fig 3, arrows indicating coolant flow), and for the bore assembly (Fig 3) to have a plurality of axial bores for entry of coolant (Fig 3, arrows indicating coolant flow). It would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the device of Hasebe et al to have a coolant routing wall which projects obliquely outward away from the bore assembly to conceal the bore assembly in an axial direction and to enhance a flow dynamics for the coolant with respect to the bore assembly as Otsuka et al teaches in Fig 2) and to use the pressure rings as taught by Hayes to direct the air flow in the motor. The motivation to do so would be that it would allow one to direct coolant to desired areas of the motor and relieve stresses produced by thermal expansion (abstract of Otsuka et al) and that it would allow one to improve the air flow within an electric motor as desired (Col 1 ll 8-9 of Hayes).

3. Regarding claim 2, Hasebe teaches that the coolant leadthrough has axial bores fluidly connected in one-to-one correspondence with a group (Fig 4,30) of axial bores of the laminated core arrangement (Fig 4,25), with a coolant stream through the axial bores of the group being essentially identical (it is inherent for the coolant stream to be essentially identical else the motor would not be cooled uniformly or evenly).

4. Regarding claim 3, Hasebe teaches that the group has two axial bores (Fig 4,25).

5. Regarding claim 4, Hasebe teaches that “the other one of the rotor pressure rings is of identical construction (Col 4 ll 24-26) and arranged at an opposite end of the laminated core arrangement (Fig 3,21a)”.
Hasebe et al discloses the claimed invention except for mentioning that “that the first and second pluralities of axial bores conduct coolant in opposite directions with respect to one another". It would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the device of Hasebe et al to mention the direction of the coolant flow and to have the first and second pluralities of axial bores conduct coolant in opposite directions with respect to one another. The motivation to do so is that it is well known in the art to alter the direction of coolant flow to suit the thermal requirement of the device.

6. Regarding claim 5, Hasebe teaches that the at least one of the rotor pressure rings has rounded edges at predetermined areas for improving a coolant flow (Hasebe et al clearly shows in Fig 4,30 that the pressure rings has rounded edges at predetermined areas for improving coolant flow).

7. Regarding claim 6, Hasebe et al discloses the claimed invention except for mentioning that the pressure rings can also be used as a fan. A claimed apparatus’ intended use does not differentiate it from a prior art apparatus. Patentable weight is not given on the pressure ring being configured as a fan.

8. Regarding claim 7, Hasebe teaches that the at least one rotor pressure ring is constructed in one piece (Fig 4,30).

9. Regarding claim 15, Hasebe teaches an electric machine having a rotor device as claimed in claim 1 (Abstract of Hasebe et al).

Claims 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe et al (US 5889342) in view of Otsuka et al (JP 2002-125352) and further in view of Poag et al (US 6300693).

10. Regarding claim 21, Hasebe et al (Fig 3,21a and 21b) teaches "the other one of the rotor pressure rings is positioned at opposite ends of the laminated core arrangement". Hasebe et al do not teach a coolant routing wall which projects obliquely outward away from the bore assembly. Otsuka et al teaches a device having a coolant routing wall (Fig 2,28 and 36) which projects obliquely outward away from the bore assembly. Otsuka et al do not teach "the pressure rings to be at an angular offset of 36° in relation to the one rotor pressure ring". Poag et al teaches end caps in an angular offset (Col 5 ll 7-13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Hasebe et al to have a routing wall which projects obliquely outward away from the bore assembly of Otsuka et al with the teachings of Poag et al to arrange the rotor pressure rings in an angular offset, since it has been held that rearranging parts of an invention involves only routine skill in the

art. *In re Japiske, 86 USPQ 70.* The motivation to do so would be that it would provide for a machine with efficient cooling (Col 1 l 39 of Poag et al).

11. Regarding independent claim 23, Hasebe et al teaches:

A rotor device, comprising (abstract):

a laminated core (Fig 3,3) arrangement mounted on a shaft (Fig 3,2) having a plurality of axial bores for conduction of a coolant (abstract of Hasebe et al), and

two rotor pressure rings (Fig 3,21a and b) mounted on the shaft (Fig 3,2)at opposite ends of the laminated core arrangement for axial securement of the laminated core arrangement (abstract and Fig 3 of Hasebe et al),

wherein one of the two rotor pressure rings is configured for routing the coolant through a first plurality of the axial bores (Col 3 ll 46-53, Fig 3 of Hasebe et al), and

the other one of the rotor pressure rings is configured for routing the coolant through a second plurality of the axial bores (Col 3 ll 46-53, Fig 3 of Hasebe et al), each said rotor pressure ring having a coolant lead through for exit of coolant in fluid communication with one of the first and second pluralities of axial bores (Col 3 ll 46-53, Fig 4,25 and 30 of Hasebe et al),

a bore assembly in fluid communication with the other one of the first and second pluralities of axial bores (Fig 4,25 of Hasebe et al), for incoming coolant from an area outside the shaft,

Hasebe et al teach the device as claimed above including use of pressure rings having a coolant leadthrough (Figs 3 and 4). Hasebe et al do not appear to teach that the

pressure ring (Fig 3,21a and b) has a coolant leadthrough "for exit of coolant" or a bore assembly (Fig 4,25) having axial bores "for incoming coolant from an area outside the shaft" or for the two rotor pressure rings (Fig 3,21a and b) to be mounted "offset to one another" on the shaft (Fig 3,2). Hasebe et al also do not appear to explicitly teach "a coolant routing wall which projects obliquely outward away from the bore assembly to conceal the bore assembly in an axial direction and to enhance a flow dynamics for the coolant with respect to the bore assembly". Otsuka et al teaches a device having "a coolant routing wall (Fig 2,28 and 36) which projects obliquely outward away from the bore assembly to conceal the bore assembly in an axial direction and to enhance a flow dynamics for the coolant with respect to the bore assembly". Otsuka et al do not teach the two rotor pressure rings to be "mounted offset to one another". Poag et al teaches end caps in an angular offset (Col 5 ll 7-13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Hasebe et al to have "a routing wall which projects obliquely outward away from the bore assembly" of Otsuka et al and to use the pressure rings as taught by Hayes to direct the air flow in the motor and to arrange the rotor pressure rings in an angular offset as taught by Poag et al, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske, 86 USPQ 70.* The motivation to do so would be that it would provide for a machine with efficient cooling (Col 1 l 39 of Poag et al), it would also allow one to direct coolant to desired areas of the motor and relieve stresses produced by thermal expansion

(abstract of Otsuka et al) and that it would allow one to improve the air flow within an electric motor as desired (Col 1 ll 8-9 of Hayes).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe et al as per claim 1 above in view of Otsuka et al (JP 2002-125352) and further in view of in view of Page (US 5825110).

12. Regarding claim 8, Hasebe et al teaches a motor cooling circuit. Hasebe et al do not appear to explicitly teach a coolant routing wall which projects obliquely outward away from the bore assembly. Otsuka et al teaches a device having a coolant routing wall (Fig 2,28 and 36) which projects obliquely outward away from the bore assembly. Otsuka et al do not tech the use of "spheroidal graphite iron as a material for the pressure rings or end rings". Page discusses the use of graphite iron (Col 3 line 25-26). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use pressure rings made of graphite iron. The motivation to do so would be that it would provide improved strength of the pressure ring, increase the lifespan and reduce the maintenance frequency of the part.

Claims 9,16,17,20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe et al (US 5889342) in view of Otsuka et al (JP 2002-125352) and further in view of Lurie et al (US 4369386).

13. Regarding claims 9 and 20, Hasebe et al teaches a motor cooling circuit having pressure rings (abstract). Hasebe et al do not teach the pressure rings to be disposed in

a circumferentially offset relationship. Lurie et al in Figures 5,7 and 8 teaches different configurations of the coolant bores of the pressure rings, which can be easily arranged in groups of bores. Further, Figure 2 of Lurie et al shows the laminated rotor with axial coolant bores where the coolant is flowing in opposite directions. It would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the two pressure rings to be disposed in a circumferentially offset relationship by a bore or a group of bores. The motivation to do so would be that it would minimize leakages from one chamber into another (Col 3 lines 18-20 of Lurie et al).

14. Regarding claims 16 and 17, Lurie et al teaches that each of the group has three or four axial bores (Figures 5,7 and 8 of Lurie et al shows a section of a pressure ring with the bores can be divided into groups having two, three or four bores each).

15. Regarding claim 22, Lurie et al (Col 1 ll 38-55) teaches that the coolant is air.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 for details.

Response to Arguments

17. Applicant's arguments with respect to claims 1-9,15-17 and 20-23 have been considered but are moot in view of the new ground(s) of rejection.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAISHADH N. DESAI whose telephone number is (571)270-3038. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen Leung can be reached on (571) 272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Naishadh N Desai
Patent Examiner

/BURTON MULLINS/
Primary Examiner, Art Unit 2834